AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of compensating for bending of an optical fibre ~~compensation~~ in light intensity-based optical measuring systems, said light intensity-based optical measuring systems comprising a sensor element connected to a measuring and control unit via ~~an optical connection~~ optical fibre and being adapted for providing a signal corresponding to a measurement of a physical parameter ~~in connection with the sensor element~~, said method comprising

generating ~~generation of~~ a measuring light signal ~~that~~;

transmitting the measuring light signal through ~~is brought to come in~~ the optical fibre towards the sensor element,

generating ~~generation of~~ a reference light signal ~~that is transmitted~~;

transmitting the reference light signal through the same optical ~~connection~~ fibre without being ~~influenced in~~ affected by the sensor element due to the measuring light being separated from the reference light, wherein said measuring signal and said reference signal ~~having~~ have different wavelengths,

detecting ~~detection of~~ said measuring signal after being influenced by the sensor element; ~~and~~

detecting ~~detection of~~ said reference signal after being transmitted through the optical fibre;~~,~~

compensating for bending of the optical fibre by reference to ~~characterized by comprising bending compensation through~~ correction data based upon pre-stored data concerning ~~the~~ a relationship between the measured reference signal and the measured measuring signal as a function of the bending influence upon said optical connection.

2. (Currently Amended) The method according to claim 1, ~~characterized by the feeding of~~ wherein said measuring signal causes ~~to the sensor element causing~~ optical interference in a cavity associated with the sensor element.

3. (Currently Amended) The method according to claim 1, ~~characterized by~~ wherein said correction data ~~consisting of~~ includes a stored table or function, describing a relationship measured beforehand, between the reference signal and the measuring signal, as a function of the bending influence.

4. (Currently Amended) A method according to claim 1, ~~characterized by being~~ wherein said sensor is utilized for pressure measurements, said sensor element ~~defining~~ including a membrane being affected by the pressure surrounding the sensor element.

5. (Currently Amended) A device for measurements in optical measuring systems comprising:

a sensor element adapted for providing a signal corresponding to a measurement of a physical parameter in connection with the sensor element;

an optical ~~connection~~ fibre connected to ~~a~~ the sensor element ~~adapted for providing a signal corresponding to a measurement of a physical parameter in connection with the sensor element~~;

a first light source and a second light source arranged at the opposite end of the optical ~~connection~~ fibre and functioning to emit a first light signal and a second light signal, respectively, at different wavelengths, the first light signal defining a measuring signal, ~~brought to come in~~ transmitted towards the sensor element through the optical fibre, and the second light signal defining a reference signal, ~~conveyed~~ transmitted through the optical ~~connection~~ fibre without being ~~influenced in~~ affected by the sensor element due to the measuring light being separated from the reference light;

a first detector intended ~~for the detection of~~ to detect a light signal modulated by the sensor element;

a second detector intended ~~for the detection of~~ to detect a light signal reflected by the sensor element; and

a ~~computerized~~ measuring and control unit, to which said detectors are connected, whereby ~~characterized by~~ said measuring and control unit comprising means for processing the values detected by said detectors, means for storing data concerning the relationship

between the measured reference signal and the measured measuring signal as a function of the bending influence upon said optical connection, and means for correcting the value detected by the first detector in dependence of said correction data.

6. (Currently Amended) The device according to claim 5, ~~characterized by~~ wherein said sensor element comprising a cavity, shaped so as to create optical interference when feeding said measuring signal into the cavity.

7. (Currently Amended) The device according to claim 6, ~~characterized by~~ wherein said cavity ~~being obtained through building up~~ includes a plurality of molecular silicone and/or silicone dioxide layers~~, and an etching procedure~~ which have been etched.

8. (Currently Amended) The device according to claim 7, ~~characterized by~~ whereby said cavity ~~being obtained through utilizing a bonding procedure~~ includes bonding layers.

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (New) The method according to claim 1, further comprising guiding the first measuring signal into a cavity of the sensor element; and reflecting the reference signal from the sensor element without entry into the cavity.

13. (New) The device of claim 5, wherein the sensor element comprises a cavity into which the measurement signal is guided, whereas the reference signal is reflected by sensor element without entering the cavity.